THE CLAIMS.

1. An isolated Ox receptor in sequencably pure form.

2. An isolated Ox receptor characterised by a high binding affinity for O501 and a poor binding affinity for methoxyidazoxan, clonidine and idazoxan.

3. An isolated Ox receptor characterised by having a binding affinity for O501 of 1 to 500 nM and affinities for methoxyidazoxan, clonidine and idazoxan of greater than 1000.

4. A receptor according to claim 3 characterised by having a binding affinity for O501 is between 10 and 100 nM and affinities for methoxyidazoxan, clonidine and idazoxan is greater than 5000 nM.

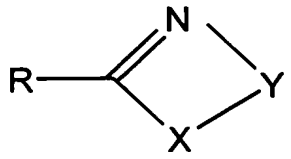
5. An isolated nucleic acid molecule which encodes an Ox receptor as claimed in any one of claims 1 to 4.

6. A recombinant plasmid, cosmid, bacteriophage or other recombinant molecule comprising a nucleic acid molecule according to claim 5.

7. A method for identifying a modulator or Ox receptor activity, said method comprising assaying recombinant Ox receptor activity in the presence of a potential modulator and comparing said activity to the activity of recombinant Ox receptor in the absence of said potential modulator.

8. A method according to claim 7 wherein the recombinant Ox receptor is obtained by expressing a functional recombinant Ox receptor polypeptide in a cell for a time and under conditions sufficient for said polypeptide to be produced in an assayable quantity.

9. Use of a compound of the formula I:



I

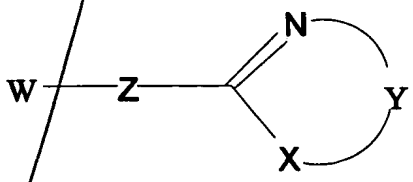
where R is the residue of an organic compound, X is O or S and Y is a divalent group making up a 5 or 6 membered ring, which compound has a selectivity for an Ox receptor over one or both of the α_2- and I_2- receptors of greater than 1, as an agonist or antagonist to the Ox receptor.

10. A method for modulating the activity of an Ox receptor including the step of applying to a source of Ox receptor an effective amount of a compound of formula I:

I

where R is the residue of an organic compound, X is O or S and Y is a divalent group making up a 5 or 6 membered ring, which compound has a selectivity for an Ox receptor over one or both of the α_2- and I_2- receptors of greater than 1.

11. A compound having a selectivity for an Ox receptor over one or both of the α_2- and I_2-receptors of greater than 1, which is a compound of formula II



II

wherein W is optionally substituted aryl, optionally substituted C_5-C_7 cycloalkyl or -CHR^1R^2 where R^1 and R^2 are independently selected from hydrogen, optionally substituted C_1-C_6 alkyl, optionally substituted C_3-C_7 cycloalkyl, optionally substituted aryl, and OR′ where R′ is optionally substituted aryl, optionally substituted C_3-C_7 cycloalkyl or

optionally substituted C_1-C_6 alkyl, provided that of R^1 and R^2 are not both hydrogen, Z is imino, C_1-C_2 alkylene, $-CH_2NH-$ or $-CH_2CH_2NH-$, X is O or S, and Y is optionally substituted C_2-C_3 alkylene, provided that W is not OR′ when Z is imino or $-CH_2NH-$; and with the further provisos that

a) when Y is CH_2CH_2, X is O and Z is imino then

(i) W is not unsubstituted or 2-mono-, 2,2-di, 2,5-di, 2,6-di or 2,4,6-tri C_{1-3} alkyl substituted cyclohexyl or 2-mono- or 2,5-di C_{1-3} alkyl substituted cyclopentyl or 2- C_{1-3} alkyl substituted cycloheptyl; and

(ii) if W is CHR^1R^2 and R^1 is H then R^2 is not selected from phenyl; phenyl substituted with methoxy, Br, Cl, F or trifluoromethyl; 3-nitrophenyl; 3- or 4-methylphenyl; 2- or 4-bromomethylphenyl; 2- or 4-chloromethylphenyl; or 2,3- or 2,6-dimethylphenyl; and

(iii) if W is CHR^1R^2 and R^1 is CH_3 or cyclopropyl then R^1 is not phenyl or phenyl substituted with alkyl, halomethyl, fluoro or trifluoromethyl; and

b) when Y is $(CH_2)_{2-4}$, X is O or S, Z is imino and W is CHR^1R^2, then

(i) if R^1 is CF_3, CF_2CF_3 or $CF_2CF_2CF_3$ then R^2 is not alkyl, optionally substituted cycloalkyl or optionally substituted aryl, and

(ii) if R^1 is optionally substituted cyclopropyl, R^2 is not H, alkyl or optionally substituted cyclopropyl;

or a pharmaceutically acceptable ester or salt thereof.

12. A compound of claim 11 wherein W is aryl (optionally substituted with hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or aryloxy); C_5-C_6 cycloalkyl (optionally substituted with hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6

cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or aryloxy); or -CHR^1R^2 where R^1 and R^2 are independently selected from hydrogen, C_1-C_6 alkyl (optionally substituted with hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or aryloxy), C_3-C_6 cycloalkyl (optionally substituted with hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or aryloxy), aryl (optionally substituted with hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or aryloxy), and OR′ where R′ is aryl (optionally substituted with hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or aryloxy), C_3-C_6 cycloalkyl (optionally substituted with hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or aryloxy), or C_1-C_6 alkyl (optionally substituted with hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or aryloxy); provided R^1 and R^2 are not both hydrogen.

13. A compound of claim 11 or claim 12 where W is phenyl or cyclohexyl, naphthyl, each of which may be optionally substituted with one to three substituents selected from hydroxy, methoxy, ethoxy, benzyloxy, NO_2, NH_2, halogen, methyl and ethyl; or -CHR^1R^2 where R^1 and R^2 are independently selected from phenyl, naphthyl, cyclohexyl, cyclopentyl, cyclobutyl, cyclopropyl, methyl, ethyl, propyl and butyl, each of which may be optionally substituted with hydroxy, methoxy, ethoxy, benzyloxy, NO_2, NH_2, halogen, methyl and ethyl, provided R^1 and R^2 are not both hydrogen.

14. A compound of any one of claims 11 to 13 wherein Z is imino or -CH_2CH_2NH-.

15. A compound of any one of claims 11 to 14 wherein X is oxygen.

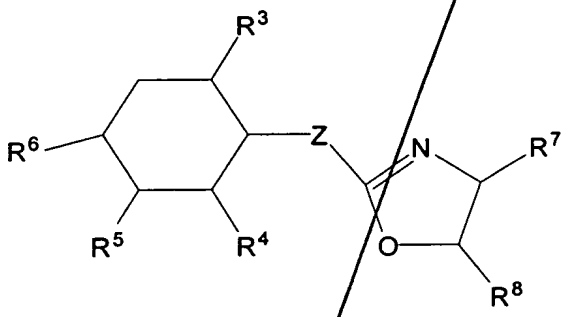
16. A compound of any one of claims 11 to 15 wherein Y is C_2-C_3 alkylene optionally substituted with C_1-C_4 alkyl, C_3-C_6 cycloalkyl, C_1-C_6 alkanoyloxy or C_1-C_6 alkyloxycarbonyl, or with two substituents which join together to form a 5-6 numbered

carbocyclic or heterocyclic ring.

17. A compound of claim 16 wherein Y is unsubstituted C_2-C_4alkylene.

18. A compound of claim 17 wherein Y is ethylene.

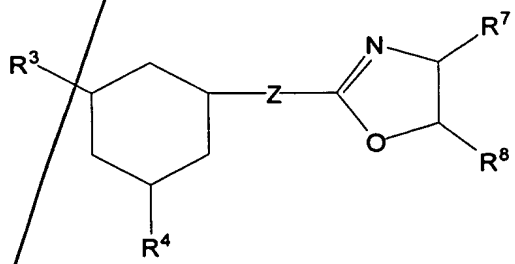
19. A compound according to claim 11 which is a compound of formula III:



III

wherein R^3, R^4, R^5 and R^6 are independently selected from hydrogen, hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, aryloxy, Z is imino, C_1-C_2 alkylene, or $-CH_2CH_2NH-$, R^7 and R^8 are independently selected from hydrogen, C_1-C_4 alkyl, C_3-C_6 cycloalkyl, C_1-C_6 alkanoyloxy or C_1-C_6 alkyloxycarbonyl or R^7 and R^8 may together form a 5 or 6 membered aromatic or non-aromatic carbocyclic or heterocyclic ring.

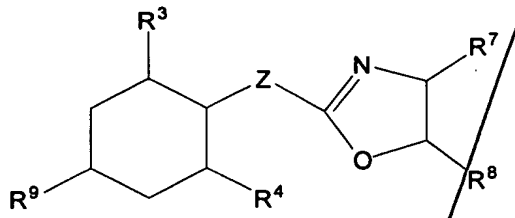
20. A compound according to claim 11 which is a compound of formula IV:



IV

where R^3, R^4, R^7, R^8 and Z are as defined in claim 19.

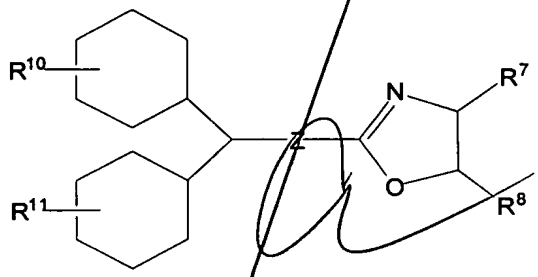
21. A compound according to claim 11 which is a compound of formula V:



V

where R^3, R^4, R^7, R^8 and Z are as defined in claim 19, and R^9 is C_1-C_4 alkyl or C_1-C_4 alkoxy.

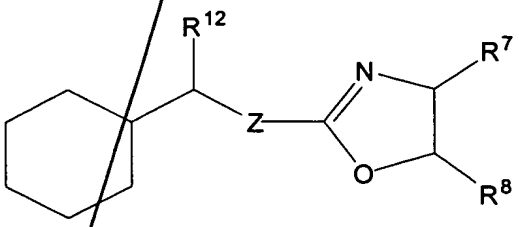
22. A compound according to claim 11 which is a compound of formula VI:



VI

where R^7, R^8 and Z are as defined in claim 19 and R^{10} and R^{11} are independently selected from hydrogen, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl and aryloxy.

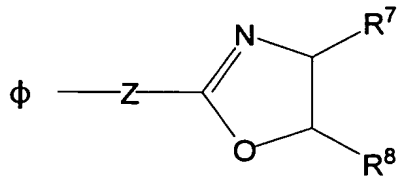
23. A compound according to claim 11 which is a compound of formula VII



VII

where R^7, R^8 and Z are as defined in claim 19 and R^{12} is hydrogen optionally substituted C_1-C_6 alkyl, optionally substituted C_3-C_7 cycloalkyl or optionally substituted aryl.

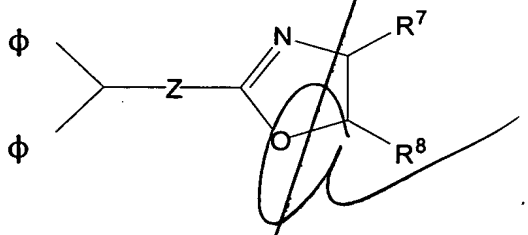
24. A compound according to claim 11 which is a compound of formula VIII:



VIII

where ϕ is optionally substituted aryl and R^7, R^8 and Z are defined in claim 19.

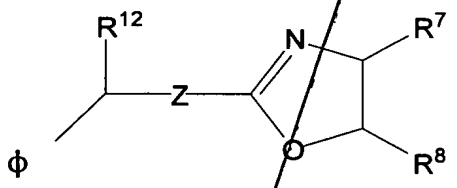
25. A compound according to claim 11 which is a compound of formula IX:



IX

where R^7, R^8 and Z and ϕ are as defined in claim 24.

26. A compound according to claim 11 which is a compound of formula X:



X

where R^7, R^8, R^{12} and Z are as defined in claim 23 and ϕ is as defined in claim 24.

27. A compound according to any one of claims 24 to 26 where ϕ is phenyl or naphthyl either of which may have one to four substituents selected from hydroxy, C_1-C_6 alkyl, C_1-C_6 alkoxy, NO_2, NH_2, C_1-C_6 haloalkyl, halogen, C_3-C_6 cycloalkyl, aryl, C_2-C_6 alkenyl, C_2-C_6 alkynyl and aryloxy.

28. A compound according to any one of claims 11 to 27 having a selectivity of greater than 3 over one or both of α_2- and I_2- receptors.

29. A compound according to any one of claims 11 to 28 having a selectivity for the Ox receptor over both the α_2- and I_2- receptors of greater than 1.

30. A compound according to any one of claims 11 to 29 having a selectivity for the Ox receptor over the I_1 receptor of greater than 1.

31. A compound according to any one of claims 11 to 30 when used to bind to and/or modulate the activity of an Ox receptor.

32. A compound of any one of claims 11 to 30 which is an agonist of Ox receptor activity.

33. A compound of any one of claims 11 to 30 which is an antagonist of Ox receptor activity.

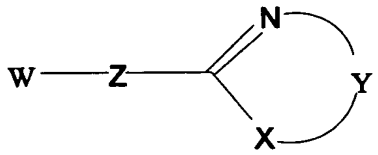
34. A modulator of Ox receptor activity which is a compound of any one of claims 11 to 30.

35. Use of a compound of any one of claims 11 to 30 to bind to and/or modulate the activity of Ox receptor.

36. A composition comprising a compound according to any one of claims 11 to 30 and a pharmaceutically acceptable carrier or diluent.

37. A method for the treatment or prevention of diseases of the central nervous system (excluding those involving CNS depressant action), cardiovascular system (excluding hypertension), or of the kidney, or diseases associated with abnormal adrenal gland secretions or in the treatment of hyperglycaemia or peptic ulcer which comprises

administering an effective amount of a compound of formula II

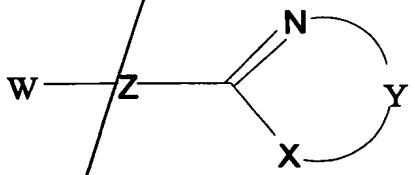


II

wherein W is optionally substituted aryl, optionally substituted C_5-C_7 cycloalkyl or -CHR^1R^2 where R^1 and R^2 are independently selected from hydrogen, optionally substituted C_1-C_6 alkyl, optionally substituted C_3-C_7 cycloalkyl, optionally substituted aryl, and OR′ where R′ is optionally substituted aryl, optionally substituted C_3-C_7 cycloalkyl or optionally substituted C_1-C_6 alkyl, provided that of R^1 and R^2 are not both hydrogen, Z is imino, C_1-C_2 alkylene, -CH_2NH- or -CH_2CH_2NH-, X is O or S, and Y is optionally substituted C_2-C_3 alkylene, provided that W is not OR′ when Z is imino or -CH_2NH-, or a pharmaceutically acceptable salt or ester thereof, to a subject in need thereof.

38. A method according to claim 38 wherein the disease of the central nervous system is selected from dementia, mood disturbances, degenerative conditions such as stroke or aging, ischaemia, CNS trauma, and neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease.

39. A method of the treatment or prevention of glaucoma comprising administering an effective amount of a compound of formula II



II

wherein W is optionally substituted aryl, optionally substituted C_5-C_7 cycloalkyl or -CHR^1R^2 where R^1 and R^2 are independently selected from hydrogen, optionally substituted C_1-C_6 alkyl, optionally substituted C_3-C_7 cycloalkyl, optionally substituted aryl, and OR′ where R′ is optionally substituted aryl, optionally substituted C_3-C_7 cycloalkyl or optionally

substituted C_1-C_6 alkyl, provided that of R^1 and R^2 are not both hydrogen, Z is imino, C_1-C_2 alkylene, -CH_2NH- or -CH_2CH_2NH-, X is O or S, and Y is optionally substituted C_2-C_3 alkylene, provided that W is not OR′ when Z is imino or -CH_2NH-; and

with the further provisos that

a) when Y is CH_2CH_2, X is O and Z is imino then

(i) if W is CHR^1R^2 and R^1 is H then R^2 is not selected from phenyl; phenyl substituted with methoxy, Br, Cl, F or trifluoromethyl; or 3-nitrophenyl; 3- or 4-methylphenyl; 2- or 4-bromomethyl phenyl; 2- or 4-chloromethylphenyl; or 2,3- or 2,6-dimethylphenyl; and

(ii) if W is CHR^1R^2 and R^1 is CH_3 or cyclopropyl then R^1 is not phenyl or phenyl substituted with alkyl, halomethyl, fluoro or trifluoromethyl; and

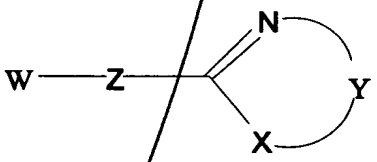
b) when Y is $(CH_2)_{2-4}$, X is O or S, Z is imino and W is CHR^1R^2, then

(i) if R^1 is CF_3, CF_2CF_3 or $CF_2CF_2CF_3$ then R^2 is not alkyl, optionally substituted cycloalkyl or optionally substituted aryl, and

(ii) if R^1 is optionally substituted cyclopropyl, R^2 is not H, alkyl or optionally substituted cyclopropyl;

or a pharmaceutically acceptable ester or salt thereof, to a subject in need thereof.

40. Use of a compound of formula II



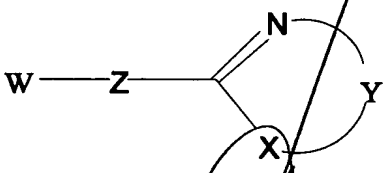
II

wherein W is optionally substituted aryl, optionally substituted C_5-C_7 cycloalkyl or -CHR^1R^2 where R^1 and R^2 are independently selected from hydrogen, optionally substituted C_1-C_6 alkyl, optionally substituted C_3-C_7 cycloalkyl, optionally substituted aryl, and OR′ where R′ is optionally substituted aryl, optionally substituted C_3-C_7 cycloalkyl or optionally substituted C_1-C_6 alkyl, provided that of R^1 and R^2 are not both hydrogen, Z is imino, C_1-C_2 alkylene, -CH_2NH- or -CH_2CH_2NH-, X is O or S, and Y is optionally substituted C_2-C_3 alkylene, provided that W is not OR′ when Z is imino or -CH_2NH-, or a pharmaceutically

acceptable salt or ester thereof, in the manufacture of a medicament for the prevention or treatment of diseases of the central nervous system (excluding those involving CNS depressant action), cardiovascular system (excluding hypertension), or of the kidney, or diseases associated with abnormal adrenal gland secretions or in the treatment of hyperglycaemia or peptic ulcer.

41 Use according to claim 40 wherein the disease of the central nervous system is selected from dementia, mood disturbances, degenerative conditions such as stroke or aging, ischaemia, CNS trauma, and neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease.

42. Use of a compound of formula II



II

wherein W is optionally substituted aryl, optionally substituted C_5-C_7 cycloalkyl or -CHR^1R^2 where R^1 and R^2 are independently selected from hydrogen, optionally substituted C_1-C_6 alkyl, optionally substituted C_3-C_7 cycloalkyl, optionally substituted aryl, and OR′ where R′ is optionally substituted aryl, optionally substituted C_3-C_7 cycloalkyl or optionally substituted C_1-C_6 alkyl, provided that of R^1 and R^2 are not both hydrogen, Z is imino, C_1-C_2 alkylene, -CH_2NH- or -CH_2CH_2NH-, X is O or S, and Y is optionally substituted C_2-C_3 alkylene, provided that W is not OR′ when Z is imino or -CH_2NH-; and with the further proviso that

a) when Y is CH_2CH_2, X is O and Z is imino then

(i) if W is CHR^1R^2 and R^1 is H then R^2 is not selected from phenyl; phenyl substituted with methoxy, Br, Cl, F or trifluoromethyl; or 3-nitrophenyl; 3- or 4-methylphenyl; 2- or 4-bromomethyl phenyl; 2- or 4-chloromethylphenyl; or 2,3- or 2,6-dimethylphenyl; and

(ii) if W is CHR^1R^2 and R^1 is CH_3 or cyclopropyl then R^1 is not phenyl or phenyl substituted with alkyl, halomethyl, fluoro or trifluoromethyl; and

b) when Y is $(CH_2)_{2-4}$, X is O or S, Z is imino and W is CHR^1R^2, then

(i) if R^1 is CF_3, CF_2CF_3 or $CF_2CF_2CF_3$ then R^2 is not alkyl, optionally substituted cycloalkyl or optionally substituted aryl, and

(ii) if R^1 is optionally substituted cyclopropyl, R^2 is not H, alkyl or optionally substituted cyclopropyl;

or a pharmaceutically acceptable ester or salt thereof;

in the manufacture of a medicament for the prevention or treatment of glaucoma.

43. Use of a compound of any one of claims 11 to 30 in the manufacture of a medicament for the treatment of diseases of the central nervous system, cardiovascular system, or the kidney, or diseases associated with abnormal adrenal gland secretions, or in the treatment or prevention of hyperglycaemia, glaucoma, peptic ulcer or in the production of analgesia.

44 Use of a compound of any one of claims 11 to 30 or a pharmaceutically acceptable salt or ester thereof in the prevention or treatment of diseases of the central nervous system, cardiovascular system, or the kidney, or diseases associated with abnormal adrenal gland secretions or in the treatment or prevention of hyperglycaemia, glaucoma, peptic ulcer or in the production of analgesia.

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